

## TECHNICAL DATASHEET

### 7411

(Resin 7407 + Hardener 7409)

#### Description

7411 is a black, fast curing epoxy resin. The adhesive is most appropriate for bonding of metals, ceramic, glass, rubber and hard plastics. It is often used as a repair adhesive (e.g. for carbon fibre reinforced composites), for cable potting or as a structural adhesive in mechanical engineering.

#### Advantages

- Fast curing
- Excellent adhesion on various substrates (surfaces)
- Black
- Solvent-free, good chemical resistance

#### Physical properties (liquid product)

Chemical base		Epoxy resin adhesive
Curing System		2-component-system
Mixing ratio (v:v)		1 : 1 ( <i>resin : hardener</i> )
Mixing ratio (w:w)		100 : 96.2 ( <i>resin : hardener</i> )
Shelf life		24 month at 2 – 30 °C
Viscosity acc. to DIN EN 12092 cone 25-1 shear rate 35		
	Resin 7407	5'000 – 8'000 mPa•s
	Hardener 7409	13'000 – 19'000 mPa•s
	Mixture	8'000 – 11'000 mPa•s
Density	Resin 7407	~ 1.18 g/cm <sup>3</sup>
	Hardener 7409	~ 1.12 g/cm <sup>3</sup>
	Mixture	~ 1.15 g/cm <sup>3</sup>
Colour	Resin 7407	Black
	Hardener 7409	Clear/yellowish
	Mixture	Black

**Curing properties**

Pot life at 23°C; ~5g

~ 3.5 minutes

Fixture time at 23°C (> 1 N/mm<sup>2</sup>)

~ 7 minutes

Final strength at 23°C

~ 48 hours

Functional strength (> 10 N/mm<sup>2</sup>)

at 23°C

~ 60 Minutes

at 40°C

~ 35 Minutes

at 60°C

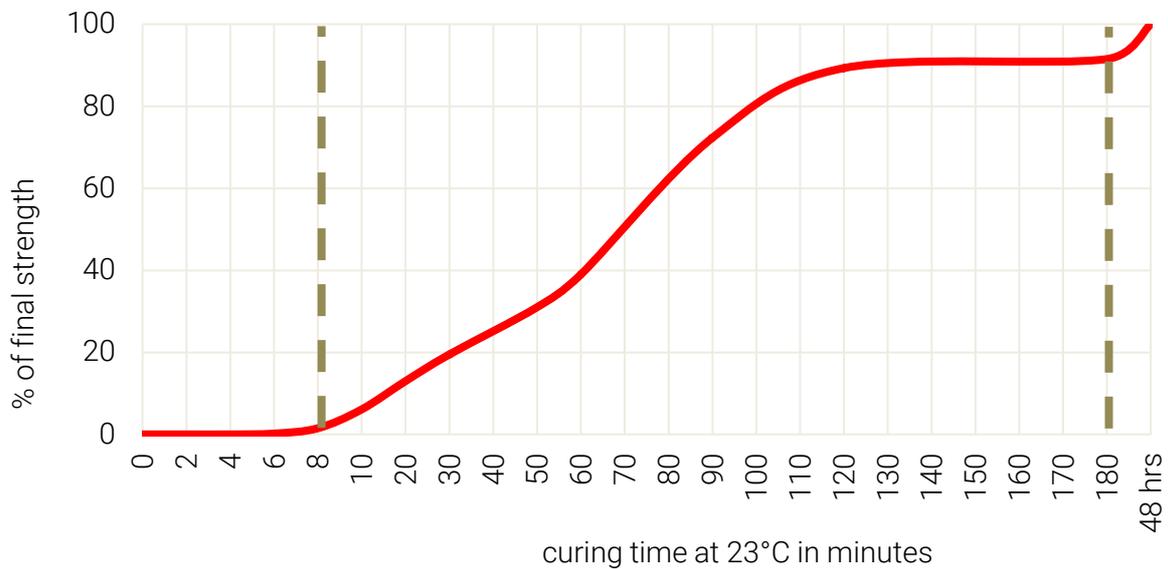
~ 10 Minutes

at 100°C

~ 2 Minutes

Strength build-up on steel-stripes (corundum blasted / degreased)

Tensile shear strength acc. to DIN EN 1465



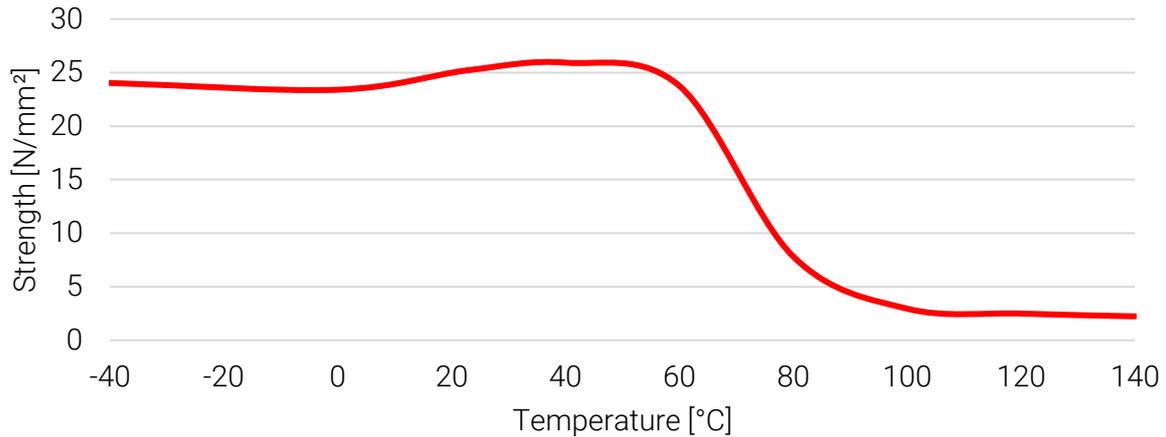
**Physical properties (cured product)**

Thermal range

- 60 °C up to 100 °C

Strength at various temperatures (Curing for 16 hours at +40°C and stored for 2 hours at test temperature / material: steel, corundum blasted)

Tensile shear strength acc. to DIN EN 1465



Glass transition point

52 °C

Coefficient of expansion

< Tg  
> Tg

52 ppm/K  
215 ppm/K

Shore D hardness

~ 75

E-modulus (DIN EN ISO 178)

1450 N/mm<sup>2</sup>

after 7 days at 23°C

Tensile strength (ISO 527 1A)

~ 46 N/mm<sup>2</sup>

after 7 days at 23°C

Elongation at break (ISO 527 1A)

~ 6 %

after 7 days at 23°C

Tensile shear strength acc. to DIN EN 1465

Curing: 16 hours at 40 °C, 24 hours at 23 °C; test temperature: 23 °C; metals corundum blasted / plastics cleaned

Steel	> 20 N/mm <sup>2</sup>
Stainless steel	> 17 N/mm <sup>2</sup>
Aluminium	> 13 N/mm <sup>2</sup>
Brass	> 15 N/mm <sup>2</sup>
Copper	> 15 N/mm <sup>2</sup>
GRP, epoxy	~ 14 N/mm <sup>2</sup>
ABS	~ 4 N/mm <sup>2</sup>
Polyamide 6	~ 4 N/mm <sup>2</sup>
PC	~ 4 N/mm <sup>2</sup>
PMMA	~ 3 N/mm <sup>2</sup>
PVC	~ 4 N/mm <sup>2</sup>
PS	~ 3 N/mm <sup>2</sup>
Thermal conductivity	~ 0.2 W/(m·K)
Volume resistivity	~ 10 <sup>14</sup> Ω·cm
Dielectric strength	~ 38 kV/mm

### Precautions

For your own safety, please refer to the information of the concerned MSDS and for the correct handling the "user instructions".

The information in this data sheet is based on the results of our research and experience. However, the suggestions herein concerning the use, application, and processing of the products (collectively, „the methods“) **are non-binding recommendations only**. It is the user's sole responsibility to determine the suitability and safety of these methods, based on the user's particular purpose in using the products. Before relying on the reliability and safety of any parts that are bonded using the products, it is extremely important that the user test the reliability and safety of the parts that are bonded. Failure to do so could result in serious personal injury. Because of the use of the products are within the purchaser's sole control, Kisling Corporation specifically disclaims all warranties, express or implied, including warranties of merchantability or fitness for a particular purpose, arising from the sale or use of the products described herein. Kisling Corporation specifically disclaims any liability for consequential, incidental, or other damages of any kind, including lost profits. Kisling Corporation's liability for damages shall not exceed the purchase price of the products used.

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